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0

Test your HT

- Make sure your radio is programmed to these frequencies:
  - Primary   147.525 Simplex, No Tone
  - Backup 1   446.500 Simplex, No Tone
  - Backup 2   146.490 Simplex, No Tone

- Set your radio to its lowest power setting.
- Call Net Control using your FCC Call Sign for a radio check on the Primary only.

- **You need to use a head set or ear bud during class.**

1

Field Operations
Type III Part B and Type II

Santa Clara County ARES®/RACES
Last Updated 26-January-2024

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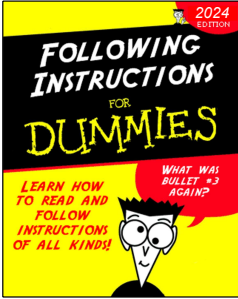
2

Housekeeping

- Introductions
- Pen/pencil, paper, course materials
- Cell phones
- Side conversations
- Questions
- Breaks **Water Only in this room**
- Restroom
- In case of emergency
- PARKING – move at first break

3

Bring your ICS-214 and ICS-211 that you started in the Part A class.

You will need a student number for the exercises. Use your student number from the Part A class.

If you did not attend Part A, please review the slides and complete the ICS-214 and 211 forms from that class. You will be assigned a student number at the beginning of class.

4

Fictitious Examples Used Today

- W6XRL4: Herman Munster
    - Father in 1960's sitcom "The Munsters"
    - Was an aspiring amateur radio operator
    - Call sign: W6XRL4

- XNDEOC: City of Xanadu Emergency Operations Center

5

Forms and Tactical Call Signs for Exercises

- Take out your partially completed forms from Part A of this class and the other blank forms
  - ICS-211
  - ICS-214

- Remember your tactical call sign from Part A.
  - Your tactical call sign will be "Student ##", where "##" is your number.

6

6

Student Number

You will be assigned a student number for the class exercises if you did not get one in the Part A class last month.

Please complete the homework before coming to class.

7

7

Learning Objectives (Reminder)

At the end of this two-part course, you should be able to:
- Describe the role of a field operator, including
  - Served agency needs, field assignment types, SCCo ARES/RACES credentialing system
- Explain and perform basic safety procedures
- Properly execute an assignment, including
  - Mobilization, selecting equipment, field operations, dealing with problems, demobilization
- Understand and use field operations checklists

8

8

Agenda

Type III, Part A (Reminder):
- Mastering Field Communications
- Supporting Our Served Agencies
- Field Comms Assignments
- Credentials
- Safety
- Simulated deployment
  - Mobilization
  - Setting Up a Field Station

Type III, Part B:
- Review of Part A
- Simulated Deployment (cont.)
  - Type III Field Equipment
  - Type II Field Equipment
  - On-Site Operations
  - Traffic Types
  - Message Passing Intro
  - Advanced Techniques (Type II)
  - Dealing with Problems
  - Demobilization
- Field Ops Checklist

9

Review:
Field Operations Type III Part A

10

Review: Communicating

- The definition of "communicate" is:
  - com·mu·ni·cate: to transmit information, thought, or feeling so that it is satisfactorily _____ and _____.

- Field Emergency Communications can involve threats to ____ and _____

- To be effective and efficient in such critical situations, we strive to _____ field communications.

11

Review: Served Agency Procedures

- Most of our served agencies are required by law to use_____ and _____

- It is important for us to understand these systems because
  - We can be more _____ and _____ at supporting our agencies if we understand how they work
  - Messages are usually addressed to/from ___ positions, which are grouped into these five sections:
    _____, _____, _____, _____, and _____
  - Requests for resources move between agencies following the hierarchy defined in _____, which is:
    _____ > _____ > _____ _____ > _____ > _____

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Equipment for
Field Communications, Type III

15

15

Standard Go Kit

- 2-hour Carry Kit
  - Keep it nearby
  - Use to make resource net damage reports
- 12-hour Go Kit
  - Needed for any deployment
- Extended Kit
  - 12+ hours
- Includes:
  - X = Required
  - R = Recommended
  - O = Optional
- Always wear a safety vest
  - Unless the served agency has something else to wear

https://www.scc-ares-races.org/operations.shtml#equip

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Radio – Portable: "Handie-Talkie" (HT)

- Radio
  - 5 Watts
  - Dual-band (2m, 70cm)
  - Recommended: dual-receive
  - Charged batteries for 12 hours (min. 3000 mAh)
    - Be careful with AA battery packs. On some HTs it will lower the power output to about 1 Watt max!
  - Recommended:
    - After market antenna can be a significant improvement
    - Chest pack or vest pocket to carry radio up high, not at waist
      - "Surveyor" and "Engineer" vests usually have two chest pockets
    - Rubber band(s) for headset plugs on some Yaesu HTs
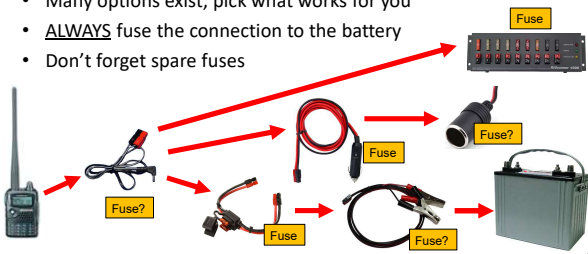 - Beware of cheap, non-Part 97 compliant junk radios

17

Radio Power Adapters

- Required: adapters to get power from three sources
  - 1) Anderson Powerpoles, 2) cigarette lighter socket, 3) car battery terminals
- Many options exist; pick what works for you
- <u>ALWAYS</u> fuse the connection to the battery
- Don't forget spare fuses

Fuse | Fuse? | Fuse? | Fuse | Fuse?

18

HT Headset/Mic Options

- You need to hear <u>and</u> be heard in noisy environments
- Minimum required: earbud or headphones
  - Only improves what you hear, not your ability to be heard by others
- Recommended: headset
  - Alternatives: earbud/mic, speaker/mic/earbud

Headset
- **Usually best** for
  - ○ Hearing
  - ○ Being heard
- Consistent mic position
- Noise cancelling mics available from some manufacturers

Earbud/mic
- Simple, inconspicuous
- Poor mic location, picks up surrounding noise

Speaker/mic
- Hard to hear in noisy environment
  - ○ May support attached earbud
- Mic location depends on how used
 - ○ Not ideal if left clipped to clothing

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Coax
More Info: Antenna Fundamentals Class

- Need to connect to existing installed antenna
  - Required
    - Minimum 25 feet of 50 ohm coax (50' recommended)
    - Adapters to connect radio, coax to common antenna connector types
  - Recommended
    - 25-50 feet of low-loss (LMR-400 UF equiv.) to reach station
    - When you add an antenna and mast (Field Type II):
      - 25 feet of lightweight (LMR-240 UF or equiv.) to go up antenna mast
    - Sufficient adapters to connect radio, coax(es), antenna

Flexible Adapter | Adapter | Adapter

[Your Radio] ↔ [Your Coax] ↔ [Your Coax] ↔ [Antenna Jack]
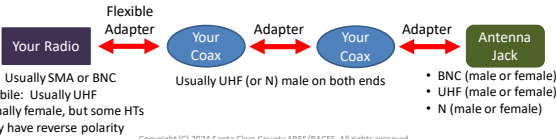
HT: Usually SMA or BNC
Mobile: Usually UHF
Usually female, but some HTs
may have reverse polarity

Usually UHF (or N) male on both ends

- BNC (male or female)
- UHF (male or female)
- N (male or female)

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Equipment for Field Communications, Type II

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Radio - Mobile

- Minimum 25 Watts (50 Watts recommended)
- Dual band (2m, 70cm)
- Dual-receive
- Cross-band repeat capable (CW-ID recommended)
- Data connector for packet is recommended
- Power adapters (with fuses) for: Anderson Powerpoles, cigarette lighter socket, vehicle battery

https://www.scc-ares-races.org/operations/vhf-uhf-mobile-voice-radio-considerations.html

22
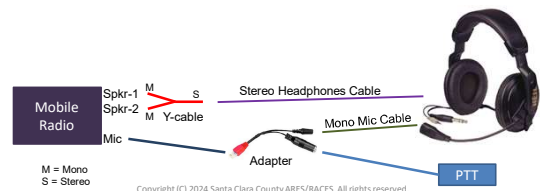

Headset

- Stereo headset is best for dual-receive
- Y-cable needed for most dual speaker-jack mobile radios
- Radio-specific adapter cable needed for external PTT, headset
- Foot switch or hand switch for PTT

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Push-to-Talk (PTT) Options for Headsets

- Headset needs hand or foot-switch for PTT
- Hand switch (usually best for outdoors)
  - Doesn't sit on the ground - good in dirt or rain, vehicle
  - One hand occupied
    - But can now be repositioned; can hold down papers
  - Hard to type and use a computer
- Foot switch (usually best for indoors)
  - Frees both hands for typing, computer logging
  - Beware of hinged, gas-pedal style
    - Ankle fatigue; chasing it around under the desk
  - Round, heavy is preferred by many
    - Stays put, allows different foot positioning, prevents fatigue
    - Local contesting favorite: Linemaster Gem V2 (shown here)
  - Not ideal outdoors (in dirt or rain)

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Headset + Headphones and/or Speakers

- A passive splitter works and is reliable

- A headphone amp is nice, but requires power

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Antenna and Mast

More Info: Antenna Fundamentals Class

- Mast
  - Telescoping mast is light, compact
  - Minimum: Base of antenna > 10 ft
  - Recommended: 32' puts your antenna above all single story and most two-story buildings
- Antenna
  - Roll-up J-pole, dual-band (2m, 70cm)
- Tripod
  - "Speaker stand" tripods are excellent
  - Use 15+ lb sand bag on each leg
  - Be sure collapsed length fits in your vehicle
- Also helpful
  - Heavy-duty Velcro straps to secure mast to tripod or pop-up tent legs

https://www.scc-ares-races.org/operations/vhf-uhf-antenna-considerations.html

3X
one for
each leg

26

26
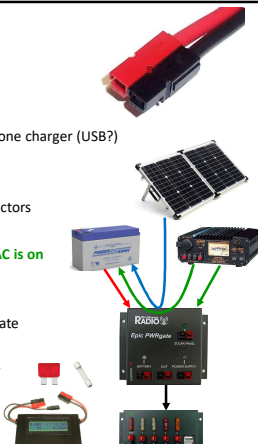
Power Distribution

- Power requirements
  - Radio(s), fan, lighting, HT charger, cell phone charger (USB?)
  - Scribe's equipment, others
- DC Power Supply
  - Consider one with multiple output connectors
- Battery charger/battery backup switch
  - Powers radio and charges battery while **AC is on**
  - Switches to battery power if **AC fails**
  - Optional **solar** for battery charging
  - Shown: West Mountain Radio Epic PWRgate
- Fused distribution
  - Shown: West Mountain Radio RigRunner
  - Don't forget the spare fuses!
- An in-line V/A/W meter can useful

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Batteries for Field Operations

- SCCo Go Kit recommended battery size
  - AGM: 20 Ah minimum; 26 Ah recommended
  - LFP (LiFePO4): 20 Ah; No firm requirement yet
- Expected [Busy] Duty Cycle (per hour)
  - 5% idle: 3 minutes
    - Nothing received
  - 20% transmit: 12 minutes
    - Send 2 formal messages
    - Receive two formal messages
    - Send/receive informal traffic
  - 75% receive: 45 minutes
    - Listening to other traffic
- This is for voice field operations. Net Control and Packet have different duty cycles.

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Field Operations Duty Cycle Testing

- Tested: 10 W and 50 W transmit power; AGM and LiFePO4 batteries
- Results: Use 10 W
  - 50 W with 26 Ah AGM battery will not last a full shift
  - 50 W with 20 Ah LFP battery will last 8+ hours

https://www.scc-ares-races.org/operations.shtml#equip

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Battery Runtime Rule of Thumb

- **Recommended size:**
  - AGM: Minimum 20 Ah minimum; 26 Ah Recommended (SCCo Go Kit)
  - LFP (LiFePO4): 20 Ah Recommended (no required min. value defined yet)
- **Battery size rules of thumb:**
  - AGM: runtime (hr) = 50% of Rated Capacity (Ah) / weighted avg. current (A)
  - LFP: runtime (hr) = Rated Capacity (Ah) / weighted avg. current (A)
- Example: Field Operator field operator using 50 W transmit power
  - Duty cycle = 5% idle @ 0.5A; 20% transmit @ 9.2A; 75% receive @ 0.6A
  - Weighted avg. current = (0.05)(0.5 A) + (0.20)(9.2 A) + (0.75)(0.6 A) = 2.3 A
- Example: 26 Ah AGM Battery
  - Runtime = (0.50)(26 AH) / (2.3A) = 5.7 hours (actual test result = 5.8 hours)
- Example: 20 Ah LFP Battery
  - Runtime = (20 Ah) / (2.3A) = 8.7 hours (actual test result = 8.9 hours)

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Operating On-Site, in the Field

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Example Deployment - Operations

- Net Check-in
- Logging
- Voice Technique
- Examples

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Check-In

- As soon as your station is set up …
- Check into the assigned net
  - Use phonetics for your call sign since this is the first time net control is hearing it
- If you were assigned a tactical call sign
  - You are checking in as a function or location, not yourself
  - Say: Net Control, <tactical call sign> checking in, <FCC call sign>
  - Example: Net Control, Shelter 1 checking in, W6XRL4
- If you were not assigned a tactical call sign
  - You are checking in as yourself
  - Say: "Net Control, <FCC call sign> checking in"
  - Example: "Net Control, W6XRL4 checking in"
- Update your ICS-214

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Exercise: ICS-214 Update

- Exercise:
  - Assume the time is now 09:00
  - You have set up your station
  - You have checked out of the staging net
  - You have checked into the student net
  - Update your ICS-214

The date on your forms are from last months class, use that date

MM/DD/YYYY

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Example: Updated ICS-214

6.	ACTIVITY LOG		
Time (24:00)	Major Activities & Events / Occasional Messages (indicate From / To / Msg# / Msg Text)		
08:00	Assignment: attend Field Ops III/II Training Class. Sheriff's Office		
08:05	Depart home, initial odometer 123		
08:25	Arrive staging, final odometer 134		
08:50	Assignment: participate as student, tactical call "student <your number>"		
09:00	Station set up complete; checked out of staging, into student net; see ICS-309		

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ICS-309 Communications Log

- Did you view the ICS-309 Video?

REVIEW

- ICS-309 is used by all field positions except Shadows
  - Checkpoints, rovers, command posts, shelters, hospitals, …
- Log all communications that involve you / your position
  - Check-in/out
  - Health and welfare checks
  - Other operator to operator traffic
  - Message traffic
- For Resource Net and Staging Net, the ICS-309 is maintained by net control only

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Exercise: ICS-309 Communications Log

- You just checked into the student net
- Assume the time is 09:00
- Log your communications

- We are still using the assignment from the Part A class:
- Activation # TC-24-02T
- Use the Operational Period used in last class
  MM/DD/YYYY 09:00 to MM/DD/YYYY 12:00

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Exercise: ICS-309 Communications Log

COMM Log ICS 309-SCCo ARES/RACES	1. Incident Name and Activation Number *Field Ops III/II Training Class* *TC-24-02T*		2. Operational Period (Date/Time) *MM/DD/YYYY* *MM/DD/YYYY* From: *09:00* To: *12:00*		
3. Radio Net Name (for NCOs) or Position/Tactical Call *Student <your number>*			4. Radio Operator (Name, Call Sign) *<your name>, <your call sign>*		
5.		COMMUNICATIONS LOG			
Time (24:00)	FROM Call Sign/ID Msg #		TO Call Sign/ID Msg #		Message
09:00			*NC*		*Check-in*

Suggestion:
If you leave the field representing you or your position blank,
it can make the log a little easier to read as it fills up

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Communications Technique

- Verbal communication must be effective, clear and concise
  - Plain English; No 10-codes, Q-codes, etc.
  - Proper (ITU) phonetics, prowords, numbers
  - Follows standard procedures
- Radio technique is effective
  - Proper power levels: repeaters vs. simplex
  - Pause for repeaters, especially when linked
- Written communication is effective, clear, concise, legible
  - Correct forms used for each function; properly completed
- Call signs and tactical calls are used properly

Reference: SCCo Performance Standards, page 7

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Methods and Procedures - General

- Operator understands and is able to describe the purpose and appropriate usage of the main nets
  - Resource, Message, Command, Hospital, City, Tactical, Packet, EOC, …
- Makes proper use of the Resource Net
- Passes messages appropriately using correct ProWords
- Maintains contact with Net Control
- Keeps logs and records correctly
- Follows served agency protocols and procedures
- Provides complete and accurate relief briefings
- Attends debriefing, if one is available

Reference: SCCo Performance Standards, pp 10-13

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Responding to Health & Welfare Checks

- Health and Welfare Checks
  - Key Points
    - Field operators responded with tactical call (good)
    - Identified any problems or needs (none in this case)
    - Ended with FCC call sign, as requested (excellent)

  - Note:
    - Checkpoint 1A has Yaesu Wires turned on. Notice the beep and the suppression of audio at the beginning of his transmission. The words "Checkpoint 1 Alpha" are completely missed!
    - If you have a Yaesu radio, you MUST disable and avoid activating that terrible "feature"!

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Keep Net Control Informed At All Times

- Example: assignment change
  - Staging has reassigned this operator to a new position
  - He does an excellent job of telling net control:
    - Old assignment (old tactical call sign)
    - New assignment (new tactical call sign)
    - The fact that he is on his way there
  - Ends with FCC call sign

- Example: restroom break
  - Never leave the net without telling net control
  - Operator arranged for a stand-in, reducing the load on net control
  - Ends with FCC call sign

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Making Reports

- Example: crowd count reports
  - Checkpoints report number of rows of people on each side of the block they are monitoring, first left, then right
  - Technically, they should use the proword "figure(s)" before saying the number. But the requested information is a number. So, the answer is understood to be a number anyway.
- Key points for both example recordings:
  - They are called by their tactical call sign
  - They answer as their tactical call sign
  - They give the required information, nothing more, nothing less
  - They end with their FCC call sign to satisfy the FCC and indicate that the transmission is completed

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Requesting / Receiving Information

- Example: directed net, always go through net control
  - Both checkpoint 10 and staging use their tactical call signs to communicate
  - Both stations go through net control
  - Both end their transmissions with their FCC call signs. Excellent.

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Exercise: ICS-309 Logging (1)

- At 09:30, net control conducts a health and welfare check
- At 09:45, you ask Xanadu EOC (XNDEOC) for some water
- At 09:50, Xanadu tells you that water is on the way
- At 10:00, net control performs a health and welfare check

- Log this message traffic on your ICS-309

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Exercise: ICS-309 Logging (1)

COMM Log ICS 309-SCCo ARES/RACES	1. Incident Name and Activation Number *Field Ops III/II Training Class* *TC-24-02T*		2. Operational Period (Date/Time) *MM/DD/YYYY MM/DD/YYYY* From: *09:00* To: *12:00*	
3. Radio Net Name (for NCOs) or Position/Tactical Call *Student <your number>*			4. Radio Operator (Name, Call Sign) *<your name>, <your call sign>*	
5.	COMMUNICATIONS LOG			

Time (24:00)	FROM		TO		Message
	Call Sign/ID	Msg #	Call Sign/ID	Msg #	
09:00			*NC*		*Check-in*
09:30	*NC*				*H&W*
09:45			*XNDEOC*		*Requested Water*
09:50	*XNDEOC*				*Water on the way*
10:00	*NC*				*H&W*

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Traffic Types

Typical for field operators

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Traffic Types in the Field

- Operator-to-Operator Traffic
  - Ex: Check-in/out, health & welfare, damage reports, status reports, etc.

- 3rd Party Traffic (messages provided by others that we send)
  - Spoken
    - Message that are told to us; usually brief
    - Ex: "Ask Steve to call Jenny at 867-5309"
    - Common for shadows

  - Written
    - Messages that are written down and handed to us
    - Ex: ICS-213 and other forms, message written on plain paper

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3rd Party Spoken Messages

- For simple spoken messages, no need for a message form
  - Example: Most messages between shadows are simple, spoken messages
    - "Ask Steven to call Jenny at 867-5309"
- Use your judgement
  - IF message is longer or more complicated
    - Such as: a complicated message that needs to be delivered exactly
  - OR if it needs routing information for delivery outside the radio room
    - Such as: a message to be delivered to an ICS position in an EOC
  - OR if the message should be tracked
    - Such as: the 3rd parties may need to refer to it again
  - THEN write it down on the appropriate form; handle as a written message
- Log all 3rd party spoken messages on an ICS-309 Comm Log
  - (Shadows can log on their ICS-214)

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3rd Party Written Messages

- 3rd party written messages <u>always</u> use an appropriate form
  - General messages on ICS-213; resource requests on EOC-213RR; etc.
- If the message is not on the appropriate form:
  - Best: Ask the author to use the correct form
    - If they don't have one, provide it to them
  - Else: Transcribe the message to the form, asking the author to clarify and fill in missing information as you go
    - Clarify spelling, other details
  - Last Resort: Staple to an appropriate form only if necessary
    - Papers can become detached, separated
    - Staples, paper clips, and odd paper sizes can cause problems when scanning/copying
- Log all 3rd party written messages on an ICS-309 Comm Log
- See: https://www.scc-ares-races.org > Operations > Forms

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Jurisdiction Status

- 3 page form
- Who:
  - From: City or Agency
  - To: County EOC
- When:
  - Responding to info requests
  - Submitting updated info
- Instructions
  - Last page

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Shelter Status

- 2 page form
- Who:
  - From: Shelter
  - To: Managing jurisdiction
    - City or County EOC
    - Red Cross
- When:
  - Responding to info requests
  - Submitting updated info
- Instructions
  - Last page

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Allied Health Status

- Who
  - From: Allied Health Facility
    - Skilled nursing, assisted living, dialysis, out-patient surgical, clinic, …
  - To: Public Health or EMS
- When:
  - Responding to request for bed counts
  - Submitting updated general info
- Instructions
  - Last page

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EOC-213RR Resource Request

- Used to request non-mutual aid resources from the county
  - Not for Law, Fire, EMS, or RACES mutual aid
- Usually sent from city EOC to county EOC (Op Area)
- Other uses
  - County-managed shelter or unincorporated area command post
  - Some cities for internal requests
- Instructions
  - Last page(s)

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Other Forms

- Hospital Forms
  - HAvBed Report, Medical Facility Status, Medical Resource Request
- City/Agency specific
  - CERT Damage Assessment
  - Other: Message, … Status, Resource Request, 9-1-1 forms
- Vendor specific
  - Food orders, Equipment orders

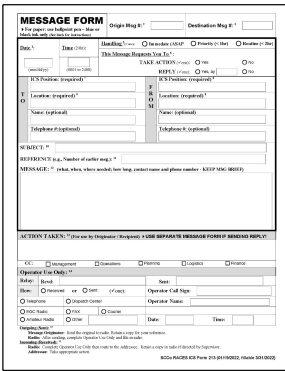- In general, use the most appropriate form for the specific message. Otherwise, use an ICS-213 Message form.

55

ICS-213 Message

- Any general message that isn't better suited for a more specific form
- If someone hands you a message on a scrap of paper, politely ask that they fill in an ICS-213
  - If they refuse, do it for them!
  - Ask them to check it for accuracy.
- Instructions
  - On last page
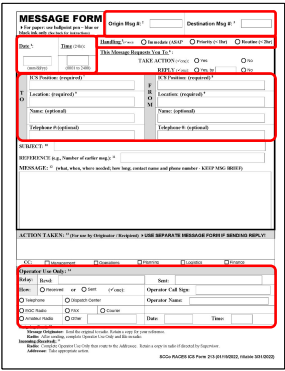
56

What is Radio Routing Info?

- The extra information that a radio operator needs to send, deliver, and track a message
  - Message Numbers
  - Date, Time, Handling Order
  - To/From
  - Radio Operator Info

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Message Number Fields on Forms
Example: Shelter A1 sends to Xanadu EOC

- Origin Station: assigns origin msg. number; sends message

| Radio Operator Only: | ¹ Origin Msg #: | SA1-1001 | Destination Msg #: | |

- Destination Station: receives message; adds destination msg. number; provides that msg. number to Origin Station

| Radio Operator Only: | ¹ Origin Msg #: | SA1-1001 | Destination Msg #: | XND-4321 |

- Origin Station: updates message form with destination msg. #

| Radio Operator Only: | ¹ Origin Msg #: | SA1-1001 | Destination Msg #: | XND-4321 |

- But some forms have no message number fields, so …

58

Message Prioritization

- Prioritize messages by:
  - Handling Order
  - Date
  - Time
  - Set by message author (3rd party)

² Date: **2**   ³ Time (24hr): **3**   ⁴ Handling: **1** ◯Immediate (ASAP) ◯Priority (<1 hr) ◯Routine (<2 hr)

- But some forms have no prioritization fields, so …

59

3rd Party Message Addressing

- Messages are addressed <u>TO</u> and <u>FROM</u> ICS Positions and Locations
  - These are required fields on all messages
- Individual names and contact info are optional fields and are seldom used

T O	⁵ ICS Position: ⁶ Location: ⁷ Name: ⁸ Contact Info:	F R O M	⁹ ICS Position: ¹⁰ Location: ¹¹ Name: ¹² Contact Info:

- But some forms have no To/From fields, so …

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Radio Routing Slip

- Like a fax cover sheet or departmental routing slip
- A place to put the radio routing info if the form doesn't have those fields
  - Message Numbers
  - Date, Time, Handling Order
  - To/From
  - Reference info about the message
    - Form Type
    - Topic/Subject of message
  - Radio Operator Info

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When/How To Use a Radio Routing Slip

- When sending or receiving a form that does not contain radio routing information

- It is NOT a substitute for the ICS-213
  - NOT a (short) message form
  - Do NOT write a message on the routing slip

- Attach to the front of the form being sent/received

- Write Origin Msg Nbr on top right of form being sent/received

- Enter Form Type and Topic (Subject) on the Routing Slip

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Where do we get the missing information

- Handling Order
- To ICS Position
- To Location

- These forms are normally sent via WebEOC over the Internet.

- The message author often does not know where the form goes.

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Recommended Form Routing Sheet

- Recommended values for key form fields
  - To Position/Location
  - Handling Order

- Can help get forms to the right place faster when sent by radio

- 2 sided
  - Front is General EOC Forms

  - Back is Medical forms and RACES Mutual Aid Request form

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Form Handling Exercise

- For each of these forms:
  - Shelter Status (city managed)
  - Allied Health Facility Status (PHDOC open)
  - EOC-213RR Resource Request
  - ICS-213 Message
  - Jurisdiction Status

- Does it need a routing slip? Why or why not?
- What is the recommended Handling?
- What is the recommended To Location?
- What is the recommended To Position?

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Message Passing Intro

A very basic intro

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Messages Are Provided To You

- As radio operators we do not generate the 3rd party messages
- You will be provided the message contents by someone from the served agency
- You will give all received 3rd party messages to a designated person at the served agency
- You should not create 3rd party messages during a drill, exercise, credential evaluation, or real activation unless specifically asked to do so by your supervisor

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Message Initiation

- Step 1: Announce quantity and handling order
  - Sender calls receiver (Example: Sender is Shelter 1; Receiver is Net Control)
    - "Net Control, I have 2 Priority messages for you"
    - "Net Control, I have 1 Immediate and 1 Routine message for you"
  - Receiver prioritizes by handling order
    - "Shelter 1, go ahead with your Immediate message"
- Step 2: Announce message type [and need for routing slip]
  - Sender tells receiver
    - "Message type is ICS-213"
    - "Message type is Shelter Status form"
    - "Message type is EOC-213RR with routing slip"
  - Receiver readies the right form, then:
    - "Go ahead" or "Go"
- Step 3: Send the message as usual
  - Five groups/fields at a time, starting with "Message number …"

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Message Logging

- Assume you sent this message to Xanadu EOC

- Assume Xanadu EOC (receiver) assigns message number: XND-205

- The time is now 10:10
- Log it! On which form?

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Exercise: ICS-309 Logging (2)

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Message Passing Training

MESSAGE FORM
▶ For paper: use ballpoint pen – blue or black ink only (See back for instructions)

Origin Msg #: [2] XND-2145   Destination Msg #: [3]

Date [1]: 02/06/2024 (mm/dd/yy)   Time (24hr): 10:32 (0001 to 2400)

Handling [5] (✓one): ○ Immediate (ASAP)   ⊙ Priority (< 1hr)   ○ Routine (< 2hr)

This Message Requests You To [4]:
TAKE ACTION (✓one): ⊙ Yes   ○ No
REPLY (✓one): ⊙ Yes, by   ○ No

TO
ICS Position: (required) [7] CERT Team Bravo Lead
Location: (required) [9] Columbia Park Staging Area
Name: (optional)
Telephone #:(optional)

FROM
ICS Position: (required) [8] CERT Coordinator
Location: (required) [9] Xanadu EOC
Name: (optional)
Telephone #: (optional)

SUBJECT: [10] Task Assignment #25

REFERENCE (e.g., Number of earlier msg.): [11]

MESSAGE: [12] (what, when, where needed; how long; contact name and phone number - KEEP MSG BRIEF)
Send a team to do damage assessment on the 200 block of San Anselmo Avenue. Reply with ETA.

This is drill traffic.

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Message Passing Training/Practice

- **Message Passing Class**
  - Message Passing is what we do; it's a critical skill
  - A separate class focuses solely on message passing technique
  - Be sure you attend at least every two years!
    - The best operators attend every year – it's THAT important!
  - **Next Class:** Saturday July 6th (pre-class homework)
  - Review *Message Handling Procedures* Document
    https://www.scc-ares-races.org/operations.shtml#standards
- **Practice**
  - https://www.scc-ares-races.org > Training > Practice Sessions
  - **On Air Practice from Home**
    - **Quarterly Training Net**
      3rd Tuesday of first month of quarter @ 20:30, after SVECS net
      On Resource Net Repeaters (AA6BT, N6NAC, W6ASH)
      Sign-up on web site
- Other Drills and Exercises

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Message Logging

Logging with message numbers

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Exercise: ICS-309 Logging (3)

- At 10:20, you send an EOC-213RR Resource Request form asking for more donuts.
- Your message number is S##-101. Xanadu's message number is XND-206.
- Log it on your ICS-309.

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Exercise: ICS-309 Logging (3)

COMM Log ICS 309-SCCo ARES/RACES	1. Incident Name and Activation Number *Field Ops III/II Training Class* *TC-24-02T*		2. Operational Period (Date/Time) *MM/DD/YYYY MM/DD/YYYY* From: *09:00* To: *12:00*		
3. Radio Net Name (for NCOs) or Position/Tactical Call *Student <your number>*			4. Radio Operator (Name, Call Sign) *<your name>, <your call sign>*		
5.			COMMUNICATIONS LOG		
Time (24:00)	FROM		TO		Message
	Call Sign/ID	Msg #	Call Sign/ID	Msg #	
09:00			*NC*		*Check-in*
09:30	*NC*				*H&W*
09:45			*XNDEOC*		*Requested Water*
09:50	*XNDEOC*				*Water on the way*
10:00	*NC*				*H&W*
10:10		*S##-100*	*XNDEOC*	*XND-205*	*[213] Classroom Status*
10:20		*S##-101*	*XNDEOC*	*XND-206*	*[213RR] More donuts*

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Exercise: ICS-309 Logging (4)

- At 10:30, Net Control performs a health and welfare check

- At 10:45, Xanadu sends you an ICS-213 Message form with a subject of "Donut Status". Their message number is XND-207. Your message number is SXX-102.

- Log these messages.

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Exercise: ICS-309 Logging (4)

COMM Log ICS 309-SCCo ARES/RACES	1. Incident Name and Activation Number *Field Ops III/II Training Class* *TC-24-02T*		2. Operational Period (Date/Time) *MM/DD/YYYY MM/DD/YYYY* From: *09:00* To: *12:00*	

3. Radio Net Name (for NCOs) or Position/Tactical Call *Student <your number>*		4. Radio Operator (Name, Call Sign) *<your name>, <your call sign>*		

5.				COMMUNICATIONS LOG	
Time (24:00)	**FROM** Call Sign/ID	Msg #	**TO** Call Sign/ID	Msg #	Message
09:00			NC		Check-in
09:30	NC				H&W
09:45			XNDEOC		Requested Water
09:50	XNDEOC				Water on the way
10:00	NC				H&W
10:10		S##-100	XNDEOC	XND-205	[213] Classroom Status
10:20		S##-101	XNDEOC	XND-206	[213RR] More donuts
10:30	NC				H&W
10:45	XNDEOC	XND-207		S##-102	[213] Donut status

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Advanced Techniques

For Field Operator Type II Credential

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Operating on Two Nets Simultaneously

- Some field assignments require simultaneous operation on two nets
- Example:
  - Hospital Net: Hospitals to PHDOC; medical issues
  - City Net: Municipal issues, such as fire, law, utilities, public works
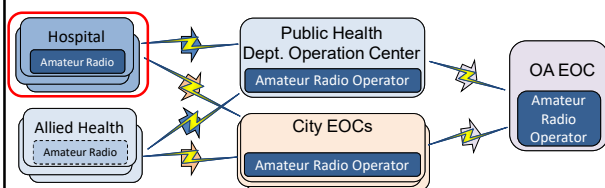
79

Operating on Two Nets Simultaneously

- Establish your primary net
  - All other things being equal, which net will you answer first?
- Use at least a dual-receive mobile radio, stereo headphones
  - If possible, use a separate radio for the secondary net so you can hear both nets while you are transmitting
  - An HT with an earbud under your headphones usually works well
- Use a separate ICS-309 Message Log for each net
  - Include net name in field 3: Radio Net Name or Position/Tactical Call
  - Examples: "Hospital Net / Velley Medical; "Santa Clara Tac 1 / Kaiser SC"
- Inform both net controls
  - "Net control, be advised that I am operating two nets simultaneously. This is my {primary|secondary} net. I may not hear you or be able to answer right away if I'm handling higher priority traffic on the other net."
- Work at your own pace; you're still just one person
- Use previously covered techniques to avoid stress, fatigue

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Cross Band Repeat
For more detail, consult the Cross Band Repeat course
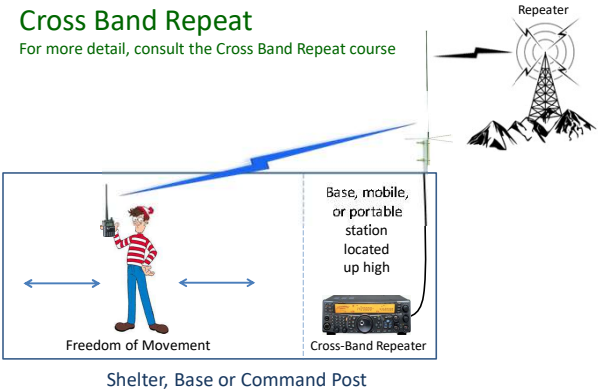
Shelter, Base or Command Post

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Cross Band Repeat
For more detail, consult the Cross Band Repeat course

- Advantages
  - Freedom of movement within the shelter, base, or command post for message pick-up and delivery, or locating people with the information you need
  - May be the only practical option you have if you're the only operator
- Challenges
  - HT audio is usually not very good, for either TX or RX
    - Use a headset with boom mic, instead of earbud with inline mic
  - Monitor your duty cycle
    - HT batteries will run down
      - Use extra-low power, have extra batteries charging at all times
    - Cross band repeater radio will overheat
      - Use low power on local/user side
      - Use a good antenna and lowest possible power on the remote/uplink side
      - Consider using a base station radio capable of higher duty cycle
    - Remember to use tone squelch to prevent repeating of noise

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Higher Traffic; Higher Speed

- A Type II operator is expected to have higher traffic levels
- Speed comes with practice and following procedures
- Net procedures
  - Proper net procedures speed up overall net operations
    - Check-in/out, constant monitoring, pauses, reporting formats, phonetics
- Message passing procedures
  - Most net traffic is message traffic
  - Proper message passing procedures speeds up most nets
    - Message prioritization, prowords
  - Those skilled at message passing can transfer a message two to four times as fast as others; as much as 10 more messages per hour!
- Take every opportunity to practice
  - On air message passing practice, weekly nets, drills and exercises

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Dealing with Problems in the Field

Challenges and What to Do About Them

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Loss of Repeater

- How to recognize
  - No courtesy tone (and there used to be one)
  - No squelch tail
  - Not receiving responses
  - No health & welfare checks; no traffic at all
  - You might hear people on the input but not the output
    - Use "Reverse" button to check

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Loss of Repeater – What to Do

- Check your equipment
  - Volume turned up? On the right frequency?
  - Equipment is operational; adequate battery power
- Switch to simplex on repeater output
  - Switch to high power; include tone, in case others are using tone squelch
  - Program backup frequencies from the ICS-205 into your radio memory and be ready to switch to them in case of repeater failure or malicious interference
- Alternate paths of communications
  - Check your Comm. Plan (ICS 205)
  - Check your briefing notes/documents
  - Have a list of frequencies for the area you are in.
- Try tactical simplex frequency for served agency
- Contact other fielded operators on tactical simplex

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Power & Phone Outages

- Field station
  - Check to be sure it's not your equipment
  - Have your flashlights and or battery-operated lanterns nearby, at all times.
  - Configure station to automatically switch to back-up power
    - Batteries – multiple sources and types
    - Back-up generator
    - Vehicle
  - Safety, safety, safety (particularly at night)
  - May affect your ability to call 911
    - Check Comm. Plan (ICS 205) for alternative method of reaching emergency services
- Traveling
  - ATM's, gas stations, banks, stores – all may be closed
  - Signage may be dark and hard to read
    - Keep flashlight/headlamp handy

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High Temperature

- Situation
  - You are operating in the middle of the summer in an area with very high temperatures which could affect equipment performance and your health.
- Action
  - Use a pop-up or other means to create shade for yourself and radio
  - Use lowest radio power possible
  - Switch radios
  - Position radio for sufficient air flow
    - Sufficient space around cooling fins
    - "Radio in a box" is not the best approach in a hot environment unless it includes forced air (fan) ventilation
    - Consider sealed "blue" ice packs (but watch for condensation!)
  - Use a 12v DC fan (consider CFM > 50 and dB < 25)

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Rain, Wind

- Situation
  - You have to operate in rain, wind or both
- Action
  - Protect your paperwork and equipment from wind, rain
    - Plastic bags for radio, clipboard
    - Clipboard(s) and weights for paperwork
  - Use a pop-up or other means to create shelter
    - Add sides to protect from blowing rain
    - Add weights to protect against wind, especially if pop-up has sides
      - Typically 40+ lbs per leg are needed
  - Keep electrical connections off wet ground

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Difficult People

- Situation
  - People may be scared, tired, stressed, or all of the above
  - This applies to other staff as well as the general public
- Action
  - Stay calm; project calmness, confidence
  - Focus on the problem, not the personality
  - Most people will calm down when they see their concern is being addressed
  - If you are unable to address the problem or if the situation persists, seek help from your supervisor

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Safety

- Pay attention to your health and those around you
  - Hydration
  - Cold and heat
  - Stress
  - Fatigue
- Do not go places that you feel are not safe
  - Moving water
  - Mud/Land slides
  - Active fires

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RF Safety (Review)

- Perform an RF Exposure Calculation
  http://www.arrl.org/rf-exposure-calculator

- More details in the Antenna Fundamentals class and in Field Operations Type III A class

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Key To Success …

Semper Gumby

("Always Flexible")

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Demobilization

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Demobilization

- Shift Change
- Closing out your assignment
- Paperwork
- Returning home

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Shift Change

- If someone will be relieving you, they should arrive early to set up their station and receive a relief briefing from you
  - See SCCo Performance Standards for relief briefing contents
- What are some key elements of the relief briefing?
  -
  -
  -
  -
  -
  -
  -

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Closing Out Your Assignment

- Check out of the net you've been using
- Check into the staging net

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Exercise:

- Assume it is 12:00 and your assignment is completed
- You checked out of your assigned net
  - In this case, the Student Net
  - Typically, a tactical net
- You checked into the Staging Net
  - Or whatever net is appropriate (local tactical, resource, …)
  - In this case, it's the Staging Net
- Update your ICS-309, ICS-214

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Exercise: ICS-309 Logging

5.	COMMUNICATIONS LOG				
Time (24:00)	FROM		TO		Message
	Call Sign/ID	Msg #	Call Sign/ID	Msg #	
09:00			NC		Check-in
09:30	NC				H&W
09:45			XNDEOC		Requested Water
09:50	XNDEOC				Water on the way
10:00	NC				H&W
10:10		S##-100	XNDEOC	XND-205	[213] Classroom Status
10:20		S##-101	XNDEOC	XND-206	[213RR] More donuts
10:30	NC				H&W
10:45	XNDEOC	XND-207			[213] Donut Status
. . .	. . .	. . .	. . .	. . .	--- other activities ---
12:00			NC		Check-out

6. Prepared By (Name, Call Sign)	6A. Signature	7. Date & Time Prepared	8.
<your name>, <your call sign>	Your Signature	MM/DD/YYYY 12:00	Page __1__ of __1__

Required

Next operator (if any) begins a new 309 form

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Example: Updated ICS-214

6.	ACTIVITY LOG
Time (24:00)	Major Activities & Events / Occasional Messages (indicate From / To / Msg# / Msg Text)
08:00	Assignment: attend Field Ops III/II Training Class. Sheriff's Office
08:05	Depart home, initial odometer 123
08:25	Arrive staging, final odometer 134
08:50	Assignment: participate as student, tactical call "student <your number>"
09:00	Station set up complete; checked into student net; see ICS-309
…	… other activities
12:00	Shift complete; checked out of student net; check into staging net

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Return or Hand Off Forms

- If a new operator is relieving you
  - Take only your ICS-214 Unit Activity log with you
  - Leave everything else at the station for the next operator
    - ICS-309 Communications Log, various message forms, notes, …
    - The new operator may need to refer to previous communications

- If you are the last operator at the site
  - Bring all forms and notes with you to staging

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Return to Staging

- Pack up your station if appropriate
- Complete any procedures requested by local staff
  - Debriefing, review forms, time accounting, etc.
- Return to staging
- Close out your ICS-214
- Turn in all paperwork
- Sign-out on the ICS-211A
- Check out of Staging Net

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Exercise: Finish Up at Staging

- The time is now 12:20
- Close out your ICS-214
- Sign-out on the ICS-211A
- Check out of staging net

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Example: Updated ICS-214

6.	ACTIVITY LOG		
Time (24:00)	Major Activities & Events / Occasional Messages (indicate From / To / Msg# / Msg Text)		
08:00	Assignment: attend Field Ops III/II Training Class. <class location>		
08:05	Depart home, initial odometer 123		
08:25	Arrive staging, final odometer 134		
08:50	Assignment: participate as student, tactical call "student <your number>"		
09:00	Station set up complete; checked into student net; see ICS-309		
…	… other activities		
12:00	Shift complete; checked out of student net; check into staging net		
12:20	Sign-out of staging; heading home		

7. Prepared By (Name, Call Sign, ICS Position)	7A. Signature	8. Date & Time Prepared	9.
<your name>, <your call sign>	Your Signature	MM/DD/YYYY 12:20	Page _1_ of _1_

↳ Required

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ICS 211A Check-in List (Communications)

ICS 211A CHECK IN LIST (COMMUNICATIONS)	1. INCIDENT NAME: Field Ops III/II Training		2. DATE: MM/DD/YYYY	3. INCIDENT NUMBER: TC-24-02T	4. CHECK IN LOCATION <class location>
			5. INFORMATION		
PERSONNEL NAME	CALL SIGN	AGENCY	TIME IN	TIME OUT	HOURS	REMARKS
<your name>	<your call>	<your org>	08:30	12:20		

ICS 211A SCCo RACES	6. NUMBER OF PAGES: ___1___ of ___1___	7. PREPARED BY (RESOURCE UNIT): <your name and call sign>	8. MISSION NUMBER XSC*

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Return Home

- Check into resource net for tracking home
  - Exception:
    - IF AND ONLY IF the event is a public service event (not a real emergency incident, not a drill), …
    - AND IF you don't need/want to be tracked home,
    - THEN you can skip the resource net on the way home
      - No need to wait around just to "check-in/checkout"

- Same Resource Net operating procedures apply
  - Check-in with your FCC call sign
  - Provide location, odometer, FCC call sign for health & welfare checks
  - Check-out when you reach your destination (Do not forget)

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Congratulations!

- You have completed a simulated full activation
  - Mobilization
  - Operations
  - Demobilization
- You learned about equipment
- You learned about handling problems
- Can you remember it all?
- Can you repeat it over and over without missing anything?
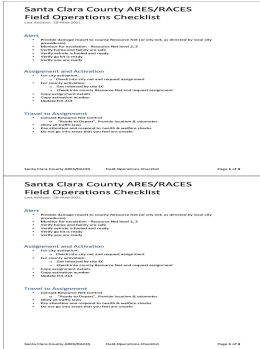
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Checklists

For Field Operations

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Checklists

- Each role has a checklist
  - Field
  - Net Control
  - Packet
  - Shadow
- Doesn't replace proper training
- Operator expected to
  - Review checklist at each stage of deployment
  - Understand meaning of each step
  - Complete each step correctly
- The Performance Standards & Best Practices has a more extensive list.

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Summary

You should now be able to:
- Describe the role of a field operator, including
  - Served agency needs, field assignment types, SCCo ARES/RACES credentialing system
- Explain and perform basic safety procedures
- Properly execute an assignment, including
  - Selecting equipment, mobilization, field operations, dealing with problems, demobilization
- Understand and use a field operations checklist

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Final Assignment

Please complete the Class Evaluation within one week.

To get course credit you need to:
   a) Attend at least 90% of the class
   b) Participate in class
   b) Complete the class evaluation

If you do these, you will get credit for the course.

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Online Class Evaluation

Log into https://www.scc-ares-races.org/activities/events.php
Click "Submit Class Evaluation" in Events

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Thank You!

If you have questions or feedback about this or other training activities, please join our **Training discussion group**:
https://scc-ares-races.group.io/g/training
This is a moderated group

Sign up for:
-- Message Passing Class – July 6th
-- Quarterly Training Net (3rd Tuesday of first month each quarter)

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